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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,635	07/02/2001	Alain Lebrun	33774	5824

116 7590 10/02/2002

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EXAMINER

PALABRICA, RICARDO J

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/869,635

Applicant(s)

LEBRUN ET AL.

Examiner

Rick Palabrica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 10 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment in Paper No.8, dated 9/17/02, amending claims 9 and 10, and adding new claims 13-16, is acknowledged.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9, 10, and 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "first type" and claim 13 recites the limitations "first type" and "second type". The word "type" extends the scope of the expression as to render it indefinite. See MPEP 2173.05(b) and *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955).

Claim 14 recites the limitation "and inserted into the cell" which is indefinite because it can be interpreted as applying to any one of the nuclear fuel, rod, shield or device.

Claim 14 contains the functional clause, "when the device is positioned on said at least one of the cells", the content of which does not inherently follow from the actual

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structure recited because it is a statement of intended or desired use. Thus, the scope of the claim and/or the metes and bounds thereof cannot be determined. Said clause accordingly raises a question as to the limiting effect of the language therein on the claim (see MPEP 2106.II.C).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Philipps et al. (U.S. 4,510,117), hereinafter referred to as Philipps et al.('117) . Philipps et al. ('117) disclose an apparatus for in situ determination of burnup, cooling time and fissile content of an irradiated nuclear fuel assembly in a fuel storage pond.

Applicant's claim language reads on Figs. 1-6 of Philipps et al. as follows: a) "structure subjacent to storage cells immersed in water filled bay" reads on structure 10 (see Figs. 1 and 6); b) "first detector" reads on detector 34 (see Fig. 4); c) "second detector" reads on detector 32 (see Fig. 4); d) "waterproof casing" reads on either structure 12 or structure 14 (see Fig. 2 or Fig. 5); e) "means of attaching the casing" reads on structure 22 (see Fig. 3 or Fig. 5); f) "boom" reads on structure 24 (see Fig. 6),

said structure is used to lower the apparatus into a storage pond (see column 5, lines 36+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Philipps et al. ('117) in view of Philipps et al. (Analytical Chemistry, Vol. 47, No. 1, January 1975), hereinafter referred to as Philipps et al. (1975). Philipps et al. ('117) disclose the applicant claims except for the details on the collimators and the transverse orientation of the detectors with respect to the fuel rods..

Phillips et al. (1975) disclose a non-destructive gamma scanning method for quantitative determination of fission products in irradiated fuel rods (see Fig. 1). Their apparatus comprises NaI and GeLi detectors inside a shielded structure. Note that the detectors are disposed transverse to the fuel rod being scanned.

Applicant's claim language of "first detector" reads on either one of the NaI detectors and second detector" reads on the GeLi detector. Note that the GeLi detector is located behind at least two collimators in continuation, with a rear collimator located just in front of the said detector, and a front collimator with a slot section extended in the

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transversal direction of a fuel pin. The lead shield of the GeLi detector comprises a thinner part in front of the NaI detectors, thicker in front of said GeLi detector. Also, the lead shield above the GeLi detector is thicker than above the NaI detector.

As to the conoidal shape of the rear collimator in claim 15, Philipps et al. (1975) teaches a rectangular shape. Note, however, that a change in shape, by itself, does not patentably distinguish the claimed invention over prior art (see MPEP 2144.04.IV.B).

As to the limitation in claim 16 regarding the shield of the second detector being slidable, Philipps et al. (1975) disclose that the position of the secondary collimator with respect to the primary collimator is optimized to precisely define the gamma ray beam hitting the GeLi detector (see page 71, "Experimental"). This optimization of the position connotes that the second collimator is inherently slidable in its casing.

One having ordinary skill in the art would have recognized that the apparatus in Philipps et al. ('117) and in Philipps et al. (1975) are for the same general purpose of assaying spent nuclear fuel, and the substitution of the set of detectors in Philipps et al. ('117), including their orientation with respect to the fuel element, by those in Philipps et al. (1975) would have been prima facie obvious.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, as disclosed by Philipps et al. ('117), by the teaching in Philipps et al. (1975), in order to have a device for discriminating nuclear fuel whereby one of the detectors is a gamma detector located behind two collimators, the rear collimator being slidable in the casing, and said

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detectors oriented transverse to the fuel element, because such modification is no more than the use of conventional designs/techniques within the nuclear instrumentation art.

As to the applicant's traverse in Paper No. 8 of the use of Philipps et al. (1975) because of the capability of the apparatus to be moved in the x, y and z directions, tilted and rotated, this argument is irrelevant because the claims are to an apparatus and not to a method of use. The capability cited by the applicant applies to the method of use of the apparatus. Also, just because such capability for movement is available does not mean that such capability has to be exercised for all applications.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References B - E further illustrate prior art.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

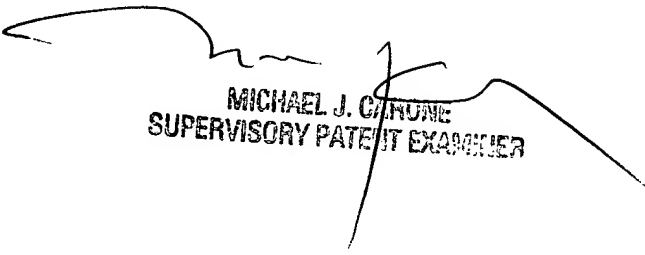
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP

September 26, 2002



MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER